

A 13. Device according to Claim 11 or 14, characterized in that the magnetic system (40) consists of magnetic rings (43) and/or pole shoe rings at the outside of the outer conductor (18).

A 14. Device according to one of ~~Claims 11 to 13~~ <sup>Claim 11</sup>, characterized in that the magnetic system (40) is composed of rod pole shoes or rod magnets (44) in the inner conductor (19).

A 15. Device according to one of ~~Claims 1 to 14~~ <sup>Claim 1</sup>, characterized in that a sensor system is provided to monitor the plasma (25) in the plasma zone (20).

## Abstract

According to this invention, a device is described to generate excited and/or ionized particles in a plasma with a generator to generate an electromagnetic wave and at least one plasma zone, in which the excited and/or ionized particles are formed by the electromagnetic wave. The device according to this invention is characterized in that the plasma zone is formed in the interior chamber of the coaxial conductor for the electromagnetic wave.